INDEX TO VOLUME XIV

JANUARY TO DECEMBER, 1909, INCLUSIVE.

A

Abandons Simplified Spelling..... 5413
Absorption of Water by Coke..... 5350
Accurate Survey Work..... 5442
Acetylene, Candles and..... 5382
" for Blasting 5158
Acids 5501
Advertising Independence 5482
Aerator, a Large Water..... 5269
Aerolith in Austrian Mines..... 5152
Aeroplane Flights 5509
" Progress 5409
Aftercooler, for the 5185
" Value of the 5474
Air Absorbs Nitrogen..... 5376
" Brake Hose, Breaking of an..... 5318
" Chamber Repaired with Concrete.. 5181
" Compression under Difficulties..... 5208
" Compressor, Synchronous Motors for 5339
" Condensing Plants 5237
" Constituents of Upper..... 5182
" Cooling by Refrigeration..... 5396
" Corrodes Boilers 5382
" Cures Water Hammer..... 5315
" Destroys Wood 5338
" Dielectric Strength of 5381
" Drying and Precooling..... 5311
" Filter 5481
" Filters and Fans..... 5381
" Hardening Machine Tools..... 5151
" Hoists in Mines..... 5222
" in Closed Rooms..... 5380
" Lift Data 5459
" " Efficiencies 5469
" " One Supplies a City..... 5494
" " Practice 5438
" " Reduces Pumping Costs..... 5381
" " a Successful Installation..... 5305
" " Waterworks 5317
" Lifts, Formulas for 5361
" " at Memphis 5393
" Liquefaction and Oxygen 5467
" Locomotives in German Mines..... 5397
" Moisture in 5489
" Pump and Vacuum Gage..... 5502
" Receiver Practice 5419
" " Tunnel Used for 5443
" Receivers 5302
" Solids Carried in..... 5446
" Steam Engine, the 5362
" Tight Milk Cans 5286
" Washing for Compressors..... 5504
Airship, Outlook for 5145
Airships, Bamboo for..... 5312
Alloy, a New..... 5223
Alpine and American Tunnel Costs..... 5378
" Tunnel Driving 5163
Altitudes, Electric Air Drill at High.... 5182
" Highest Reached 5446
" Heart Action at Highest..... 5310
Aluminum for Flashlights..... 5191
" Patents Expiring 5223
Ancient and Modern Contractor..... 5144
Aneroid Barometer, Pocket..... 5222
Ankylostomiasis 5171
Art, Development of an..... 5153
Appreciation of the Rock Drill..... 5360
Artillery Precision 5351
Aviation, Glossary of..... 5342
Aviators, Suggestions for..... 5382

B

Bacteria, Fans Circulate 5408
Balloon Ascents, High 5382
Balloons at Constantinople..... 5351
" and Thunderstorms 5482
Baltic and Black Sea Canal..... 5413
Bamboo for Airships..... 5312
Banner Year for American Shipping..... 5251
Barge Canal, Power Drives on..... 5323
Barometer, a Monumental..... 5139
" Electrical 5455
" and Coal Mine Accidents... 5263
Bath, the Sand Blast in..... 5467
Bell Humidifier, the 5507
Bells, Submarine Signal..... 5449
Bengal, First Coal Cutter in..... 5337
Benzene or Benzine?..... 5344
Bergen Tunnel, Lackawanna R. R..... 5232
Better Light and Air for Mines..... 5180
Biggest Battleship 5160
Blast, Lightning Fires a..... 5414
Blasting Operation Details..... 5464
Blau Gas Welding..... 5492
Blower for Dust Collecting..... 5285
Blow-out Shots in Coal Mines..... 5178
Blows the Work Away..... 5436
Boiler Corrosion Caused by Air..... 5382
" Tester, Portable Locomotive..... 5343
Breakdown Piston 5181
Bricklaying, Cost of 5446
Bubbles, Soap 5296
Builder of First Iron Vessel..... 5159
Bureau of Mines, no Time for a..... 5249
Business Openings for Engineers..... 5439

C

Caisson Disease and its Prevention..... 5398
" " Discussion .....,5431, 5498
" Floating a Heavy..... 5208

" Movable for Submarine Work. 5422
" Workers, a Bill for..... 5250
Caissons in Great Britain..... 5299
Calcium Carbide 5160
" " for Wool Testing..... 5381
" Chloride, Preventing Freezing. 5155
Canal, Baltic and Black Sea..... 5413
" N. Y. State Barge..... 5345
Canals of Germany..... 5314
" Value of 5312
Candle Power Standard Unsatisfactory.. 5278
Candles and Acetylene 5382
Capacities and Velocities, Pipe..... 5214
Cape Cod Canal 5380
Cape to Cairo Railway..... 5352
Carbon Dioxide for Skin Diseases..... 5489
Carbon Disulphide for Rats..... 5247
Cards from Cutoff Rock Drill..... 5278
Care of Pneumatic Carving Tools..... 5293
Carnegie and the Chemist..... 5235
Case Hardening 5189
Cause of Compressor Explosions..... 5250
Cement Helps a Cracked Cylinder..... 5251
" Sea-water-proof 5236
Centenarian Steam Engine..... 5223
Centrifugal Air Compressors 5487
" Pumps 5286
Charging Air Chambers 5426
Chemicals, Libeled 5235
Chemical Products Originated by Man.. 5351
Chemistry of Mine Gases..... 5371
Children and Electric Wires..... 5407
Chimney, the Highest..... 5446
Chinese Weights and Measures..... 5189
Clay 5315
Cleaning Bridge Steel with Sand Blast. 5280
" Ships with Pneumatic Tools... 5457
" Textile Machinery 5201
Climatic Range of Temperature, etc..... 5170
Clouds, Height of..... 5381
Club, Compressed Air..... 5220
Coal Cutting Machines..... 5351
" Dust and Mine Explosions....5147, 5211
" Fields, Area of..... 5222
" Mine Accidents and the Barometer. 5263
" " Theatre, a 5155
" Mines, Blown-out Shots in..... 5173
" " Electric Plants in..... 5373
" " Cave in 5223
" Mining Record, Unique..... 5407
" in New York..... 5238
" Smokeless Burning of..... 5501
Combined Compressor and Pump..... 5243
Compressed Air Blows the Work Away. 5436
" " for Roundout Syphon.. 5291
" " Engineering 5355
" " Haulage Record 5375
" " Information 5509
" " in the Coal Mine..... 5476
" " Textile Mills 5387
" " Thorax Operation 5318
" " Killing Weeds 5131
" " Measurement of 5278
" " Oxydizing Filter 5276
" " Pumps Sewage 5338
" " Salvage Feats 5236
" " Superheated Steam and. 5175
" " versus Steam in Mining 5174, 5325
Compressor Designing 5484
" for South Africa..... 5326
" Lubricator 5264
" Unloader 5265
Compressors, Electric Motors for..... 5301
" German Electric Driven... 5231
" Operating Conditions of... 5140
" Turbo 5364
Concrete and a Broken Air Chamber.... 5181
Condensing Plant, Air..... 5237
Consulting Engineer, the..... 5236
Contractor, Ancient and Modern..... 5144
Converted to Air, a Steam Hammer..... 5337
Cooling Agent, Saturated Air as a..... 5204
" Intake Air 5157
Copper Requirements of Battleships..... 5190
Corrosion, Pipe 5184
Cost of Hydro Electric Power..... 5283
" " the Intake 5507
Crane, Air Operated Jib..... 5176
Cunarders, Cost of the Big..... 5279
Cupola Melting on Cold Days..... 5318
Cyanamid 5181
Cyanide Poisoning, Antidote for..... 5285
Cylinder, Air, Lubricator..... 5508
" Oil in Air Compressor..... 5255
Cylinders, Air, Intake Pressure in..... 5441

D

Dampening Mine Air with Steam..... 5190
Dams and Irrigation Works..... 5351
Deep Borehole 5445
Deepest Bore 5317
" Metal Mines 5316
Demijohn Waters 5253
Dense Air Refrigerator, Wood's..... 5139
Designing, Compressor 5484
Despatch Tube, Pneumatic..... 5344
" Tubes, Homemade 5207
Details of Blasting Operation..... 5464
" " Mining Practice 5412
Development of an Art..... 5153
Diagram of Mean Effective Pressures... 5457
Diamond Drilling on the Rand..... 5189
Dielectric Strength of Air..... 5381
Diver Clears the Pump..... 5436
Double Well 5190
Dreadnought Broadside 5445
Dream, a Liquid Air..... 5152
Dredge, Suction, Record..... 5492
Dredges, Seagoing 5157
Drill Records, Electric Air..... 5300
" Sharpening 5309
" for City Contracts, Electric Air the. 5241
Drills According to Conditions..... 5408
" Heavy Truck for..... 5437
Dry Blast, Gayley's Invention of the..... 5132
Dust Particles in Air..... 5264
Dynamite, How Not to Thaw..... 5248

E

Edison on Education and Achievement.. 5231
Edison's Way 5213
Effective Discipline 5306
Efficiencies 5469
Efficiency, Ideal Machine..... 5308
Eggs and Humidity..... 5504
" Preserving 5214
Electric Air Drill at High Altitudes.... 5182

" " " Independent of Altitude 5411
" " " Records 5188, 5300
" " " Work 5241
" " Drills in Homestake Mine 5482
Electric Barometer 5455
" Drier, Question of..... 5508
" Compressor, Automatic 5247
" Ignition of Fire Damp..... 5267
" Motors for Compressors..... 5301
" Plants in Coal Mines..... 5373
" Wires, Children and..... 5407
Electricity in Coal Mining..... 5349
" in Factories 5223
" in Mines 5146
Electrolysis of Water Pipes..... 5254
Elevators in New York..... 5254
Engine, Air Steam..... 5362
" Building, Seventy-five Years of. 5506
Engineer, the Consulting..... 5236
Engineers, Business Openings for..... 5439
Engineering, Compressed Air..... 5555
" Contractors, American Society of 5346
" Society of Wisconsin..... 5276
Enigma, a Scientific..... 5269
Europe, Water Transportation in..... 5410
European Water Powers..... 5240
Everlasting Inventor, the 5245
Explosion of Compressed Air Main..... 5186
" Pipe and a Runaway Compressor 5188
Explosions, Cause of Compressor..... 5250
" Mine 5347
" Two Severe Mine..... 5154

F

Fans Circulate Bacteria..... 5408
Fast Driving on the Rand..... 5240
Fight Stops Diver's Air Supply..... 5189
Filter, Compressed Air Oxydizing..... 5276
Firedamp, Electric Ignition of..... 5267
Fire Extinguishing Compound..... 5304
Flames in Compressed Air Pipe..... 5378
Flashlight, Aluminum for..... 5191
Flat Wheels 5254
Flights of the Wrights..... 5474
Floating a Heavy Caisson..... 5208
Flowing Oil Wells by Compressed Air... 5215
Fog Dissipated by Electricity..... 5284
" Smoke and, in Cities..... 5509
For the Aftercooler 5185
Forest Products, Laboratory..... 5286
" Resources, U. S..... 5219
Formulas for Air Lift Pumping..... 5361
Fossilization of Organic Remains..... 5318
Free Water in Earth's Crust..... 5246
Fresh Air 5246

G

Gage, Pressure and Conditions..... 5170
Gas Detector for Submarines..... 5222
Gas Engine Driven Gas Compressor.... 5253
" " Self Starting..... 5430
Gas Engines, How they Work..... 5184
" High Pressure Distribution..... 5506
" Pipe Bursts 5445
" Transmission, High Pressure..... 5306
Gases, Mine, Chemistry of..... 5371
Gasoline, Volatility of..... 5383
Gayley Process, Saving by the..... 5178
Gayley's Invention of the Dry Blast.... 5132
German Electric Driven Compressors... 5231
" Mine Locomotives ...5172, 5219, 5397
Germany, Canals of..... 5314
Geologist in Louisiana 5309
Glove, Rubber Distender..... 5308
Glossary of Aviation..... 5342
Graphite for Air Compressors..... 5472
Gravel, Washing for Railway Ballast.... 5284
Gravitation, Mechanical Imitation of.... 5244
Grease Catches Small Diamonds..... 5481
Grouting Foundations 5255
Gunnison Tunnel 5424

H

Hair Rope Repels Snakes..... 5224
Hammer Drills for Sewer Work..... 5464
Hand Rock Drilling Contest..... 5158
Hardening Machine Tools, Air..... 5151
Haulage Record, Compressed Air..... 5375
Haupt, Gen., Death of..... 5410
Heart Action at High Altitudes..... 5310
Height of Clouds..... 5381
High Balloon Ascents..... 5382
" Pressure Gas Distribution....5306, 5506
" and Low Pressure for Sand Blast. 5137
" Wave in the Mediterranean..... 5510
History, Rock Drill..... 5410
Hole in the Hill, the..... 5295
Home-made Despatch Tubes..... 5207
Horse Power for Less than a Pound of Coal 5372
Horse Power of Falling Water..... 5189
Hose Fatigue Testing Machine..... 5279
" Hardening of 5224
" Nipple, Stop Cock and..... 5343
Hot Air Club..... 5220
Humidity and Egg Preservation..... 5504
" " Mine Explosions 5202
" in Coal Mines 5444
" Measurement of 5495
" Temperature and 5170
Humidifier, the Bell..... 5507
Hydrogen, New Process..... 5285
Hydro Pneumatic Reversing Mechanism 5179
Hydro Pneumatic Wheel Press..... 5375
Hygienic Economics 5280
Hygrometry 5167

I

Ice to Prevent Freezing..... 5248
Indicator Cards, Variable Volume Compressor 5232
Induced Currents, Ventilation by..... 5221
Innings of Progress..... 5377
Insects as Bearers of Disease..... 5309
Intake Air, Cooling..... 5157
" Cost of the..... 5507
" Pressure in Air Cylinders..... 5441, 5473, 5505
Inventor, the Everlasting..... 5245
Inventors, Free Workshop for..... 5510
Investments, Mining 5334
Iron Dust and Fast Colors..... 5184

Irregular Steam Flow..... 5266
Irrigation Transportation 5477
" Works 5351
Isle Royale, Sale of..... 5285

K

Killing Weeds with Compressed Air.... 5731, 5166

L

Lackawanna, Bergen Tunnel..... 5232
Ladder Dredge, a Big..... 5510
Lake Copper 5263
Land and Water..... 5350
Large Air Compressor..... 5326
" Compressed Air Plans for South Africa 5242
Largest Artificial Lake..... 5231
" Windmill in U. S..... 5227
Law, Ventilation, for Factories..... 5470
"Leak-No," for Stopping Cracks..... 5255
Leak was at the Other End..... 5247
Leaky Discharge Valves..... 5346
Libeled Chemicals 5235
Life Saving Cannon, a..... 5477
Lightning Fires a Blast..... 5414
Lignumvitae, Substitute for..... 5183
Linoleum Substitute 5341
Liquid Air Dream, a..... 5152
" " for Skin Diseases..... 5489
" " in the Mine..... 5216
Liquified Gas, Welding with..... 5492
Locomotive Boiler Tester..... 5343
Locomotives, German Mine....5172, 5218, 5397
Longest Pipe Line..... 5350
Lubrication, Compressor 5264, 5508

M

Machine, Ideal Efficiency..... 5308
Mean Effective Pressures in Air Compressors 5457
Measuring the Air..... 5477
Measurement of Compressed Air..... 5278
" " Humidity 5495
Mechanical Engineer's Safety Valve..... 5436
" Imitation of Gravitation..... 5244
Memphis, Air Lifts at..... 5393
Mercury Telescope 5445
" Vapor Lamps and Eyesight.... 5509
Metric System and Fluid Pressures..... 5319
Miles of Telephone Wires.....5490
Milk 5313
Mine Development on the Rand..... 5346
Mine Explosion, a Localized..... 5248
Mine Explosions 5347
" " Coal Dust and.....5147, 5211
" " Humidity and 5202
" " Two Severe 5154
" Gases 5371
" Rescue, Portable Oxygen in..... 5340
Mines, Aerolith in Austrian..... 5152
" and Mining Investments..... 5334
" Better Light and Air for..... 5180
" Deepest Metal 5316
" Electricity in 5146
" Liquid Air in..... 5216
" Pneumatic Signals for..... 5221
Miner's Inch 5222
" Phthisis 5319
Mining, Compressed Air *vs.* Steam in.... 5325
" Engineering 5382
" Practice, Details of..... 5412
Mixture of Steam and Neutral Gas..... 5259
Moisture in the Air..... 5489
Molybdenum 5190
Money, Where to find the..... 5408
Montana Sapphires 5190
Montijus, Automatic 5147
Monument to Engineer..... 5222
Monumental Barometer 5139
Motor Driven Compressor..... 5477
Mountain Sickness 5351
Moving a Gas Main..... 5256
" a Town Outside its Limits..... 5254
Mushroom, a Phenomenal 5510

N

Natural Gas, Combustion of..... 5255
" " Compression and Transmission 5332
" " in India 5381
Natural Ice Prohibited..... 5255
Navarro 5217
Neither Hands nor Feet..... 5284
Neutral Gas and Steam for Power..... 5259
New Zealand Tunnel Enterprise..... 5295
N. Y. State Barge Canal..... 5345
Nitrates Direct from Air..... 5376
Nitric Acid from the Air..... 5442
Non-Inflammable Celluloid 5482
No Time for Bureau of Mines..... 5249

O

Oiling System, Pneumatic..... 5394
Oil in Peanuts..... 5223
Oil Wells, Compressed Air in..... 5215
Oil Well Pumping Tests..... 5270
Operating Conditions of Compressors... 5140
Outdoor Mining of Anthracite..... 5382
Outlook for the Airship..... 5145
Overloading Paradox, an..... 5252
Oxygen, Air Liquefaction and..... 5467
" for Gas Poisoning..... 5254
" in a Mine Rescue..... 5340
" Stimulating with 5309
" Torch 5158
Ozone, Purifying Water by..... 5461
" Plant 5158

P

Panama Canal 5342
Paradox, an Overloading..... 5252
Particles, Dust, in Air..... 5264
Patents..5160, 5191, 5224, 5256, 5287, 5319, 5352 5383, 5416, 5446, 5479, 5511
Peroxide of Sodium..... 5270
Phonographic Safe Lock..... 5511
Photographing Under Pressure..... 5266
Physical Tests for High Altitudes..... 5191
Pipe Capacities and Velocities..... 5214
" Corrosion 5184
" Explosion and Runaway Compressor 5188
" Steam Around Air..... 5220
Pipes, Flames in Compressed Air..... 5378
Piston Breakdown 5181
Pliny's Battering Rams..... 5222

Pneumatic Caissons in Great Britain.... 5299
" Carving Tools, Care of..... 5293
" Devices in Car Repairing..... 5238
" Electric Sea Sounding..... 5476
" Hammer, Uses of..... 5210
" " Welding Boiler Tubes 5211
" Jam Riveters 5461
" Oiling System 5394
" Ore Separation 5284
" Postal Tubes 5190
" Signals for Mines..... 5221
" Tires, Air Pressures for..... 5476
" Tool Fastener 5305
" Tools Cleaning Ships..... 5451
" Walnut Harvesting 5210
Porter, Chas. T. 5281
Pound of Coal, Less than a..... 5372
Power Drives on the Barge Canal..... 5323
" from Steam and Neutral Gas.... 5259
" Value of Air and Gas..... 5176
Precooling Apparatus 5311
Preserving Eggs 5214, 5255
Pressure and Gage Conditions..... 5170
" of Inclined Rock Strata..... 5286
" and Wages 5379
" High or Low for Sand Blast?.. 5218
Pressures, Volumes and Temperatures... 5427
Prevention of Caisson Disease..... 5399
Profit Sharing in Shipbuilding..... 5160
Progress, Aeroplane 5409
Progress, the Innings of..... 5377
Projectiles, Luminous 5344
Protecting Paste, a Steel..... 5252
Pump, Diver Clears the..... 5436
Pumps, Charging Air Chambers of..... 5426
Pumped by its Own Gas..... 5279
Pumping Out a Mine..... 5159
" Systems, Oil Well..... 5270
Pure Iron 5158
Purifying Water by Ozone.....5461
Push, not a Pull, Vacuum a..... 5174

R

Railroad Side of it, the..... 5253
Railway Across the Andes..... 5482
Rand, Compressors on the..... 5222
" Fast Driving on the..... 5240
" Mine Development on the..... 5346
" Rock Drills on the..... 5456
Rand, Jasper R., Death of..... 5282
Rats, Carbon Disulphide for..... 5472
Receiver, Air, Practice..... 5419
Receivers, Air 5302
Record, Unique Coal Mining..... 5407
Refrigeration, Air Cooling by..... 5396
" for Passengers' Rooms.... 5190
Research Bureau 5158
Resources, Forest, U. S..... 5219
Respirator for Mines..... 5481
Responsibility of Manufacturer..... 5351
Reversing Mechanism, Hydro Pneumatic 5179
Richards, Chas. B., Retirement of..... 5318
Riveter, a Homemade Pneumatic..... 5237
Riveters, Pneumatic Jam 5461
Rock Breaker, Subaqueous 5228
Rock Drill, Appreciation of..... 5360
" " Cut-off Cards 5278
" " History 5410
Rock Drills on the Rand..... 5456
Rock Temperature in Bendigo Mines.... 5318
Rondout Siphon, Compressed Air for... 5291
Rubber Glove Distender..... 5308
Rueping Process for Creosoting Timber 5245
Running Two Stage Compressor Single Stage 5220

S

Safeguarding Pennsylvania Coal Mines.. 5250
Safety in Humidity in Coal Mines..... 5444
" Lamp 5381
" Valve, Mechanical Engineer's.... 5436
Samples of Air from Great Altitudes... 5482
Salvage Feat, a Compressed Air..... 5236
Sand Blast, Cleaning Bridge Steel..... 5280
" " for the Bath..... 5467
" " for Polishing 5510
" " High or Low Pressure for?.. 5137, 5218
" " Outfit 5216
" " Resistance of Different Materials 5255
" " Tumbling Barrel, an English. 5248
Saturated Air as a Cooling Agent..... 5205
Saturation at Different Temperatures... 5376
Saving by the Gayley Process..... 5178
" " Railroad Cut-off 5481
Savings, Wealth in..... 5316
School of Aeronautics..... 5476
Scientific Enigma, a..... 5269
Scott Air Compressor..... 5475
Sea, the, Why Salt?..... 5308
Sea-water-proof Cement 5236
Seagoing Dredges 5157
Searchlight Shells 5268
Seventy-five Years of Engine Building.. 5506
Sewage, Compressed Air Pumps..... 5338
Sewer Work, Hammer Drills for..... 5464
Sharpening Rock Drills..... 5309
Sheep Water 5445
Shipping, Banner Year for American..... 5251
Ship Canal in Scotland..... 5319
Signals, Pneumatic, for Mines..... 5221
Silica, Fossilizing Action of..... 5285
Simplified Spelling Abandoned..... 5413
Sixteen Tons of Eagles..... 5481
Smoke and Fog in Cities..... 5509
Smokeless Burning of Coal..... 5501
Soap for Compressor Valves..... 5221
Soap Bubbles, Tricks with..... 5296
South Africa, Compressed Air Plans for. 5242
Sprinker Systems, Calcium Chloride for. 5155
Steam Flow, Irregular..... 5266
" Hammer, Converted to Air..... 5337
" Pipe and Air Pipe..... 5220
" Versus Compressed Air in Mining 5174
Steel Gas Mains..... 5280
" Protecting Paste 5252
Stimulating with Oxygen..... 5309
Stopcock and Hose Nipple..... 5343
Strike for One Cent..... 5222
Subaqueous Rock Breaker..... 5228
Submarine Bells for Lightships....5149, 5510
Submarine Work, Movable Caisson for.. 5422
Substitute for Lignumvitae..... 5183
Suction Dredge Record..... 5492
" Extended by Air..... 5509
Suffocation in a Salt Mine..... 5159

Sugar Cane, Wax from..... 5380
Suggestion, a Windmill..... 5411
Sulphur Dioxide in the Air..... 5413
Surgery and Pure Air..... 5440
Survey Work, Accurate..... 5442
Superheated Steam and Compressed Air. 5175
Synchronous Motors for Air Compressors 5339

T

Table of Mean Effective Pressures..... 5457
" " Volumes, Pressures and Temperatures 5428
Temperature and Humidity..... 5170
Temperature, Volumes, Pressures and.... 5427
Testing Hose 5279
" Vegetables for Copper..... 5223
Textile Machinery, Cleaning..... 5201
Textile Mills, Compressed Air in..... 5387
Theatre, a Coal Mine..... 5155
Three Stage Compressor, Study of a.... 5484
Throttle and Oiler..... 5374
" Stuck on Hoisting Engine..... 5159
Ton, Various Values of..... 5189
Tool Fastener, Pneumatic..... 5305
Tower Built of Concrete..... 5284
Trousers on Sausages..... 5350
Truck for Heavy Drills..... 5437
Tubes for Freight in New York..... 5159
Tuckahoe Quarries, Closing of..... 5314
Tunnel Costs, Alpine and American..... 5378
" Drained by Sinking Well in it.. 5481
" Gunnison 5424
" Linings, Pressure in..... 5256
" Under the St. Lawrence..... 5318
" Used for Air Receiver..... 5443
Tunnels, Alpine, Driving..... 5163
" Under the Delaware..... 5153
Tunneling 5477
" Subaqueous, Gloucester, Mass. 5195
Turbo Compressors 5364
Two Stage Compressor, Running Single Stage 5220
Typical Wastes 5182

U

Unica, a New Gun Material..... 5255
Unloader, Compressor 5265, 5494
Ups and Downs of the Yankee..... 5155

V

Vacuum a Push, not a Pull..... 5174
" Gage, Air Pump and..... 5502
Value of Canals..... 5312
" of the Aftercooler..... 5474
Valves, Soap for Compressor..... 5221
Vanadium 5159
Variable Volume Compressor, Cards from 5232
Ventilating Fans, Reversible..... 5222
Ventilation by Induced Currents..... 5221
" in Mines 5446
" Law for Factories..... 5470
Volatility of Gasoline..... 5383
Volumes, Pressures and Temperatures.. 5427

W

Wages, Air Pressure and..... 5379
Walnut Harvesting 5210
Washing Air for Compressors..... 5504
Waste Heat of Gas Engine..... 5222
Wastes, Typical 5183
Water Hammer, Air Cures..... 5315
" Power from Lake Erie..... 5189
" Powers, European 5240
" Pumped by its Own Gas..... 5279
" Purifying by Ozone..... 5461
" Sheep 5445
" Transportation in Europe..... 5410
" We Buy and Eat..... 5422
Waterworks, Air Lift..... 5317
Wax from Sugar Cane..... 5380
Wealth in Waste..... 5244
" in Savings 5316
Weeds, How Killed by Chemical Sprays 5166
Welding Boiler Tubes..... 5211
" With Liquefied Gas..... 5492
Well, a Double..... 5190
Wells, Only Deep Ones Safe..... 5285
Westinghouse 5157
Wheel Press, Hydro Pneumatic..... 5375
Where to Find the Money..... 5408
Why is the Sea Salt?..... 5308
Widow with a Proposition..... 5344
Windmill and Electric Generator..... 5319
" Largest in U. S..... 5227
" Suggestion, a 5411
Wood, Air Destroys..... 5338
" Preserving Process 5172
Wood's Dense Air Refrigerator..... 5139
Wool Testing, Calcium Carbide for..... 5381

Z

Zalinski, Death of Major..... 5283
Zapote, a Mexican Wood..... 5285